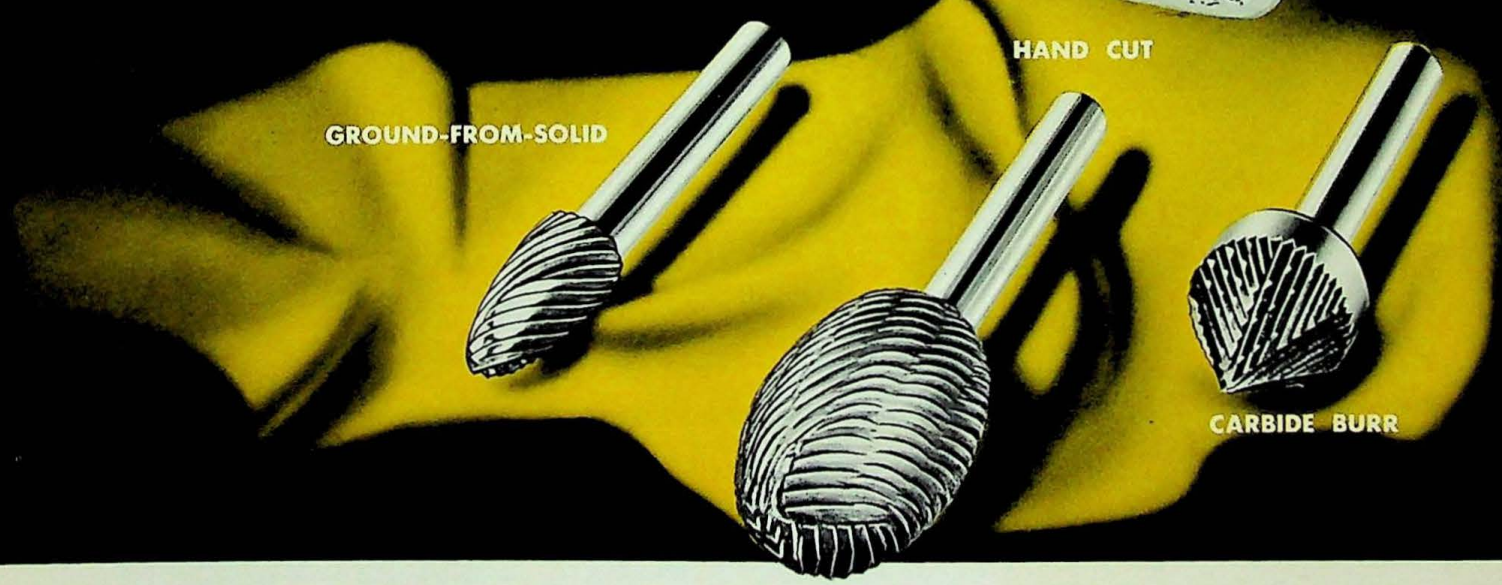
HELLER ROTARY FILES



MARSHALL-NEWELL SUPPLY COMPANY

101 UTAH AVE. SOUTH SAN FRANCISCO, CALIF.

PL 6-2400 JU 3-9230

999 ARDEN WAY NORTH SACRAMENTO, CALIF.

WA 2-0481

INDEX

HAND-CUT AND GROUND-FROM-SOLID HIGH-SPEED STEEL ROTARY FILES AND CARBIDE BURRS:

PAGE NO.

BALL SHAPE 3
BARREL SHAPE 3
BI-SHAPE 3
CONCAVE SHAPE — TYPE I 3
CONCAVE SHAPE — TYPE II 4
CONE SHAPE — (60° and 90°) 4
CONE SHAPE — other 4
CYLINDRICAL SHAPE — BALL NOSE 4
CYLINDRICAL SHAPE — DOUBLE TAPER 5
CYLINDRICAL SHAPE — FLAT END 5
FLAME SHAPE 5
INVERTED CONE SHAPE 5
MINIATURE HIGH-SPEED STEEL ROTARY FILES 8
OVAL SHAPE 6
SOLID CARBIDE BURRS — SETS 7
TAPERED SHAPE — RADIUS END 6
TAPERED SHAPE — (14° INCLUDED ANGLE) 6
TREE SHAPE — POINTED END 6
TREE SHAPE — RADIUS END 6
POPULAR ASSORTMENTS 8
REGRINDING SERVICE 8

HELLER CHATTERLESS COUNTERSINKS IN HIGH SPEED STEEL AND CARBIDE AND THE COMPLETE HELLER CARBIDE LINE ARE ILLUSTRATED IN CARBIDE TOOL CATALOG.

GENERAL INFORMATION ON HELLER ROTARY FILES

TYPES

HAND-CUT HIGH-SPEED STEEL ROTARY FILES: For use on hard and dense metals such as die steel, cast iron, welds. Hand-cut rotary files may be converted to ground-from-solid when worn out.

GROUND-FROM-SOLID HIGH-SPEED STEEL ROTARY FILES: For use on aluminum, brass, bronze, magnesium, and plastics as well as steel. Less tendency to clog. Precision ground after hardening. These files may be re-ground.

CARBIDE BURRS: All series C Burrs are furnished with 1 5/8" x 1/4" brazed steel shanks; all are available from stock in standard (medium) cuts. Fine, coarse, and diamond cuts on request. If your particular job cannot be accomplished by the shapes or sizes described, our engineers will develop any special burrs you may require.

HAND-CUT and **GROUND-FROM-SOLID HIGH-SPEED ROTARY FILES** as well as **CARBIDE BURRS** may be used with either flexible or stationary shaft machines and with portable electric or air tools.

CUTS

SCALE OF CUTS
FOR GROUND-FROM-SOLID ROTARY FILES
Number of teeth to the circumference

Dia.	Coarse	Medium	Fine	Dia.	Coarse	Medium	Fine
1/8"	8	10	15	5/8"	18	25	40
3/16"	9	12	20	3/4"	18	25	40
1/4"	10	15	20	7/8"	20	30	50
5/16"	12	18	25	1"	25	30	55
3/8"	12	20	30	1 1/8"	25	30	55
1/2"	15	25	35				

Medium Cut is furnished unless otherwise specified.

SPEEDS

HIGH SPEED STEEL ROTARY FILES
Recommended Operating Speeds for Various Materials
Revolutions per Minute for Various File Diameters

	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	1"
Steel	4,000	2,500	2,000	1,500	1,350	1,200	800
Cast Iron	6,000	3,400	2,250	1,750	1,450	1,250	1,000
Aluminum Brass Bronze	15,000	10,000	8,000	6,000	5,000	4,000	2,500
Magnesium	8000	7000	6500	6000	5000	4500	4000

CARBIDE BURRS
Recommended Speeds for Various Diameters – Medium Cut

Dia.	R.P.M.	Dia.	R.P.M.	Dia.	R.P.M.	Dia.	R.P.M.
1/8"	22,000	3/8"	13,000	5/8"	11,000	7/8"	10,000
1/4"	15,000	1/2"	12,000	3/4"	11,000	1"	10,000

When used on stainless steel above speeds should be increased approximately 60%.

All Rotary File Shanks are 1/4 inch diameter unless otherwise specified.

All Heller H. S. Rotary Files furnished with black nitrided finish only.

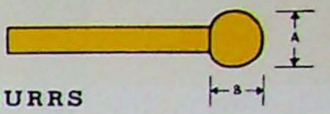
HELLER TOOL CO.
A Subsidiary of Simonds Saw and Steel Co.
NEWCOMERSTOWN, OHIO

Copyright 1959, Heller Tool Co., Newcomerstown, Ohio

HAND CUT
(High Speed Steel)

GROUND-FROM-SOLID
(High Speed Steel and Carbide)

ball shape



HIGH SPEED STEEL

Hand Cut	Ground-from-solid	Dimensions A	Dimensions B
H12	HG12	1/8"	1/8"
H13	HG13	3/16"	3/16"
H14	HG14	1/4"	1/4"
H88	HG88	5/16"	5/16"
H15	HG15	3/8"	3/8"
H16	HG16	1/2"	1/2"
H17	HG17	5/8"	5/8"
H18	HG18	3/4"	3/4"
H19	HG19	1"	1"

CARBIDE BURRS

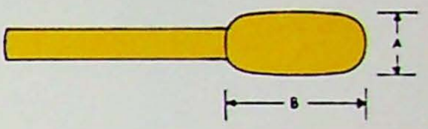
	Dimensions A	Dimensions B
C-10	3/8"	5/16"
C-11	1/2"	7/16"
C-12	5/8"	9/16"
C-13	3/4"	11/16"

(All Shanks 1/4" Diameter)

HAND CUT
(High Speed Steel)

GROUND-FROM-SOLID
(High Speed Steel)

*barrel shape



HIGH SPEED STEEL

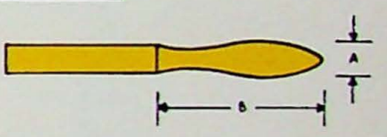
Hand Cut	Ground-from-solid	Dimensions A	Dimensions B
H89	HG89	1/2"	1"

(All Shanks 1/4" Diameter)

HAND CUT
(High Speed Steel)

GROUND-FROM-SOLID
(High Speed Steel)

*bi-shape



HIGH SPEED STEEL

Hand Cut	Ground-from-solid	Dimensions A	Dimensions B
H10	HG10	1/4"	1"
H11	HG11	5/16"	1 1/8"
H97	HG97	3/8"	1 1/8"

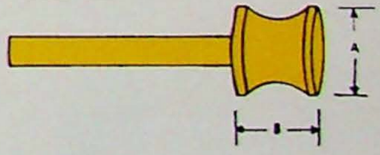
(All Shanks 1/4" Diameter)

HAND CUT
(High Speed Steel)

GROUND-FROM-SOLID
(High Speed Steel)

*concave shape

Type 1



HIGH SPEED STEEL

Hand Cut	Ground-from-solid	Dimensions A	Dimensions B
H75	HG75	3/4"	1/2"
H90	HG90	1"	7/32"
H91	HG91	1 1/4"	7/32"

(All Shanks 1/4" Diameter)

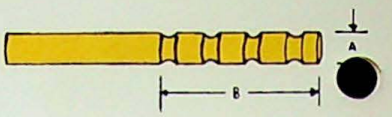
*These files made in carbide on special order only.

HAND CUT
(High Speed Steel)

GROUND-FROM-SOLID
(High Speed Steel)

*concave shape

Type 2



HIGH SPEED STEEL

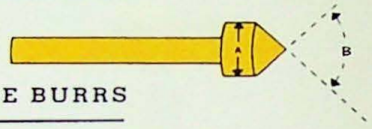
Hand Cut	Ground-from-solid	Dimensions A	B
H92	HG92	1/4"	1 3/16"

(All Shanks 1/4" Diameter)

HAND CUT
(High Speed Steel)

GROUND-FROM-SOLID
(High Speed Steel and Carbide)

cone shape (60° and 90°)



HIGH SPEED STEEL

Hand Cut	Ground-from-solid	Dimensions A	C
H20	HG20	1/2"	90°
H21	HG21	5/8"	90°
H22	HG22	3/4"	90°
H23*	HG23*	1"*	90°
H24	HG24	1/2"	60°
H25	HG25	5/8"	60°
H26	HG26	3/4"	60°

CARBIDE BURRS

	Dimensions A	B
C-60	3/8"	60°
C-61	1/2"	60°
C-62	5/8"	60°
C-90	3/8"	90°
C-91	1/2"	90°
C-92	5/8"	90°

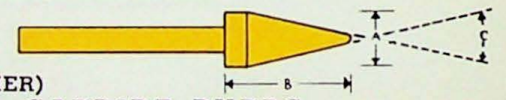
(All Shanks 1/4" Diameter)

*H-23 and HG-23 also available in 1 1/4", 1 1/2", 2" and 2 1/2" diameter made without point. 1 1/4" and 1 1/2" diameter have 3/8" shank, 2" diameter has 1/2" shank, 2 1/2" diameter has 3/4" shank.

HAND CUT
(High Speed Steel)

GROUND-FROM-SOLID
(High Speed Steel and Carbide)

cone shape (OTHER)



HIGH SPEED STEEL

Hand Cut	Ground-from-solid	Dimensions A	B
H27	HG27	1"	1 3/8"
H41	HG41	1/4"	1/2"
H42	HG42	1/4"	3/4"
H43	HG43	1/4"	1"
H44	HG44	5/16"	3/4"
H45	HG45	5/16"	1"
H46	HG46	1/4"	1 1/8"
H47	HG47	3/8"	5/8"
H48	HG48	1/2"	7/8"
H49	HG49	5/8"	1"

CARBIDE BURRS

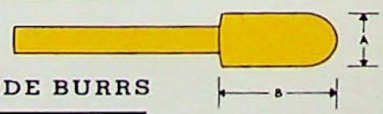
	Dimensions A	B	C
SM-4	3/8"	5/8"	28°
SM-5	1/2"	7/8"	28°
SM-6	5/8"	1"	31°

(All Shanks 1/4" Diameter)

HAND CUT
(High Speed Steel)

GROUND-FROM-SOLID
(High Speed Steel and Carbide)

cylindrical (BALL NOSE)



HIGH SPEED STEEL

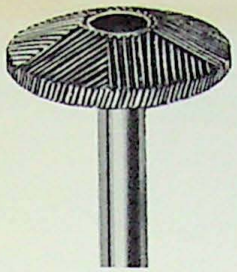
Hand Cut	Ground-from-solid	Dimensions A	B
H59	HG59	1/8"	1/2"
H60	HG60	1/4"	1"
H61	HG61	1/4"	1 1/2"
H62	HG62	3/8"	1"
H63	HG63	3/8"	1 1/2"
H64	HG64	1/2"	1"
H65	HG65	5/8"	1"
H66	HG66	3/4"	1 1/4"
H67	HG67	5/16"	1 1/2"
H68	HG68	1/2"	1 1/2"

CARBIDE BURRS

	Dimensions A	B
C-20	3/8"	3/4"
C-21	1/2"	1"
C-22	5/8"	1"

(All Shanks 1/4" Diameter)

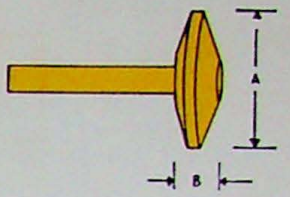
*These files made in carbide on special order only.



HAND CUT
(High Speed Steel)

GROUND-FROM-SOLID
(High Speed Steel)

*cylindrical
(DOUBLE TAPER)



HIGH SPEED STEEL

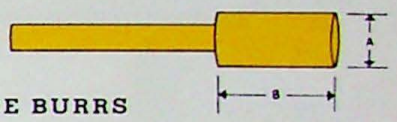
Hand Cut	Ground-from-solid	Dimensions A	Dimensions B
H73	HG73	1⅛″	⅜″

(All Shanks ¼″ Diameter)

HAND CUT
(High Speed Steel)
Cut end unless otherwise specified

GROUND-FROM-SOLID
(High Speed Steel and Carbide)
Plain end unless otherwise specified

cylindrical
(FLAT END)



HIGH SPEED STEEL

Hand Cut	Ground-from-solid	Dimensions A	Dimensions B
H50*	HG50	⅛″	½″
H51	HG51	¼″	1″
H52	HG52	¼″	1½″
H53	HG53	⅜″	1″
H54	HG54	½″	1″
H55	HG55	¾″	¾″
H56	HG56	5/16″	1½″
H57	HG57	⅜″	1½″
H58	HG58	½″	1½″
H93	HG93	⅝″	1″
H94	HG94	¾″	½″
H95	HG95	1″	1″

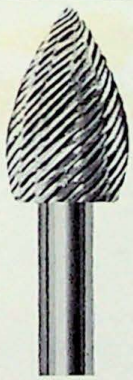
* (Not end cut)

CARBIDE BURRS

	Dimensions A	Dimensions C
C-1	⅜″	¾″
C-2	½″	1″
C-3	⅝″	1″

(All Shanks ¼″ Diameter)

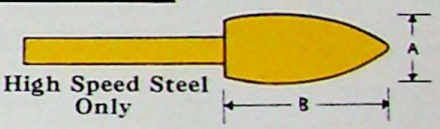
Furnished with plain end unless otherwise specified



HAND CUT
(High Speed Steel)

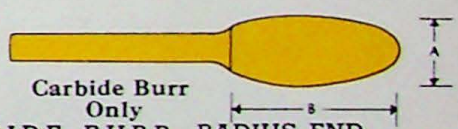
GROUND-FROM-SOLID
(High Speed Steel)

flame shape



High Speed Steel Only

flame shape
(RADIUS END)



Carbide Burr Only

HIGH SPEED STEEL

Hand Cut	Ground-from-solid	Dimensions A	Dimensions B
H1	HG1	⅝″	⅞″
H2	HG2	⅝″	1 7/16″
H3	HG3	¾″	1¾″

CARBIDE BURR RADIUS END

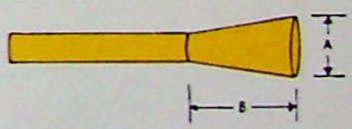
Radius End	Dimensions A	Dimensions B
C-131	½″	1¼″
C-132	⅝″	1 7/16″
C-133	¾″	1⅝″

(All Shanks ¼″ Diameter)

*HAND CUT
(High Speed Steel)

†GROUND-FROM-SOLID
(High Speed Steel)

*inverted cone shape



HIGH SPEED STEEL

Hand Cut	Ground-from-solid	Dimensions A	Dimensions B
H74	HG74	¾″	⅝″
H96	HG96	½″	¾″

*Furnished with cut end.
†Furnished with Plain end.

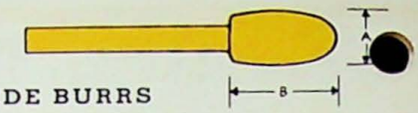
(All Shanks ¼″ Diameter)

*These files made in carbide on special order only.

HAND CUT
(High Speed Steel)

GROUND-FROM-SOLID
(High Speed Steel and Carbide)

oval shape



HIGH SPEED STEEL

Hand Cut	Ground-from-solid	Dimensions A	Dimensions B
H34	HG34	3/16"	5/16"
H35	HG35	1/4"	1/2"
H87	HG87	3/8"	5/8"
H36	HG36	7/16"	21/32"
H37	HG37	1/2"	7/8"
H38	HG38	5/8"	1"
H39	HG39	3/4"	1 1/8"
H40	HG40	1"	1 3/8"

CARBIDE BURRS

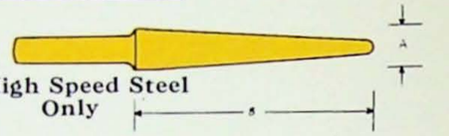
	Dimensions A	Dimensions B
C-50	3/8"	5/8"
C-51	1/2"	7/8"
C-52	5/8"	1"

(All Shanks 1/4" Diameter)

HAND CUT
(High Speed Steel)

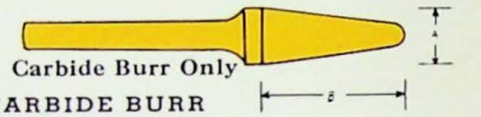
GROUND-FROM-SOLID
(High Speed Steel)

tapered (RADIUS END)



High Speed Steel Only

tapered (14° INCLUDED ANGLE)



Carbide Burr Only

14° included angle

HIGH SPEED STEEL

Hand Cut	Ground-from-solid	Dimensions A	Dimensions B
H69	HG69	5/16"	5/8"
H70	HG70	5/16"	1 1/4"
H71	HG71	3/8"	1 3/4"
H72	HG72	5/8"	1"

CARBIDE BURR

	Dimensions A	Dimensions B
C-121	5/16"	7/8"
C-122	3/8"	1 1/16"
C-123	1/2"	1 1/8"
C-124	5/8"	1 3/16"
C-125	3/4"	1 1/2"

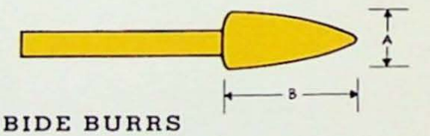
(All Shanks 1/4" Diameter)

HAND CUT
(High Speed Steel)

GROUND-FROM-SOLID
(High Speed Steel and Carbide)

tree shape

(POINTED END)



HIGH SPEED STEEL

Hand Cut	Ground-from-solid	Dimensions A	Dimensions B
H4	HG4	1/4"	3/4"
H5	HG5	3/8"	3/4"
H6	HG6	1/2"	3/4"
H7	HG7	1/2"	1 1/8"
H8	HG8	5/8"	1"
H9	HG9	1 1/8"	2"

CARBIDE BURRS

	Dimensions A	Dimensions B
C-40	3/8"	3/4"
C-41	1/2"	3/4"
C-42	1/2"	1"
SG-6	5/8"	1"

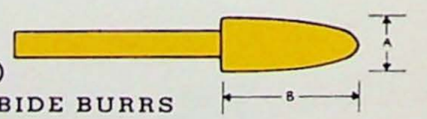
(All Shanks 1/4" Diameter)

HAND CUT
(High Speed Steel)

GROUND-FROM-SOLID
(High Speed Steel and Carbide)

tree shape

(RADIUS END)



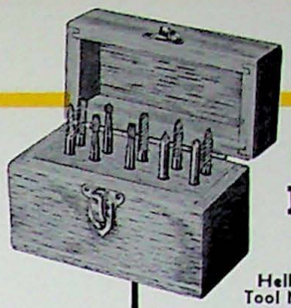
HIGH SPEED STEEL

Hand Cut	Ground-from-solid	Dimensions A	Dimensions B
H28	HG28	1/4"	3/4"
H29	HG29	1/4"	1 1/2"
H30	HG30	3/8"	3/4"
H31	HG31	1/2"	1 1/8"
H32	HG32	3/4"	1 1/4"
H33	HG33	1 1/8"	2"

CARBIDE BURRS

	Dimensions A	Dimensions B
C-30	3/8"	3/4"
C-31	1/2"	1"
C-32	5/8"	1"

(All Shanks 1/4" Diameter)



Solid Carbide Burr Set No. 1

1/8" DIA. HEADS
1/8" DIA. SHANKS
1½" OVERALL LENGTH

Heller Tool No.	S.C.T.I.* Number	Length Of Head
101-A	SA-43	9/16"
102-A	SD-42	1/8"
103-A	SC-42	9/16"
104-A	SF-42	1/2"
105-A	SG-44	1/2"
106-A	SL-42	1/2" — 8°
107-A	SE-41	7/32"
108-A	SN-42	3/16"— 10°
109-A	SJ-42	60°
110-A	SK-42	90°

Solid Carbide Burr Set No. 2

1/4" DIA. HEADS
1/4" DIA. SHANKS
2" OVERALL LENGTH

Heller Tool No.	S.C.T.I.* Number	Length Of Head
101-C	SA-1	5/8"
102-C	SD-1	1/4"
103-C	SC-1	5/8"
104-C	SF-1	5/8"
105-C	SG-1	5/8"
106-C	SL-1	5/8" — 14°
107-C	SE-1	3/8"
108-C	SN-1	5/16"— 10°
109-C	SJ-1	60°
110-C	SK-1	90°

Solid Carbide Burr Set No. 3

1/4" DIA. HEADS — 1/8" DIA. SHANKS
1¼" SHANK LENGTH - 1¾" MAX. OAL.

Tool No.*	Head Length
SA-51	1/2"
SB-51	3/16"
SC-51	1/2"
SD-51	1/4"
SE-51	3/8"
SF-51	1/2"
SG-51	1/2"
SM-51	1/2"—22°
SN-51	1/4"—10°

Solid Carbide Burr Set No. 4

1/4" DIA. HEADS — 3/16" DIA. SHANKS
1¼" SHANK LENGTH - 1¾" MAX. OAL.

Tool No.*	Head Length
SA-91	1/2"
SB-91	3/16"
SC-91	1/2"
SD-91	1/4"
SE-91	3/8"
SF-91	1/2"
SG-91	1/2"
SM-91	1/2"—22°
SN-91	1/4"—10°

Solid Carbide Burr Set No. 5

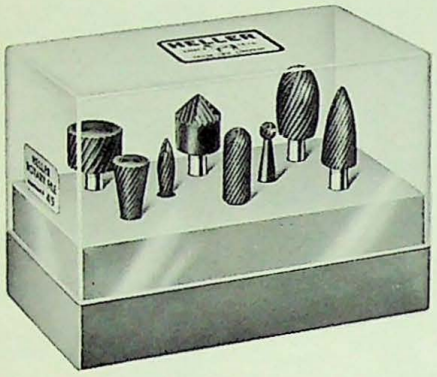
3/16" DIA. HEADS — 3/16" DIA. SHANKS
2" OVERALL LENGTH

Tool No.*	Head Length
SA-81	5/8"
SD-81	3/16"
SC-81	5/8"
SF-81	1/2"
SG-81	1/2"
SM-81	5/8"—14°
SE-81	9/32"
SN-81	1/4"—10°
SJ-81	60°
SK-81	90°

ALL BURRS MAY BE ORDERED SEPARATELY

* Solid Carbide Tool Institute Identification

6 Popular ASSORTED SETS of HELLER ROTARY FILES



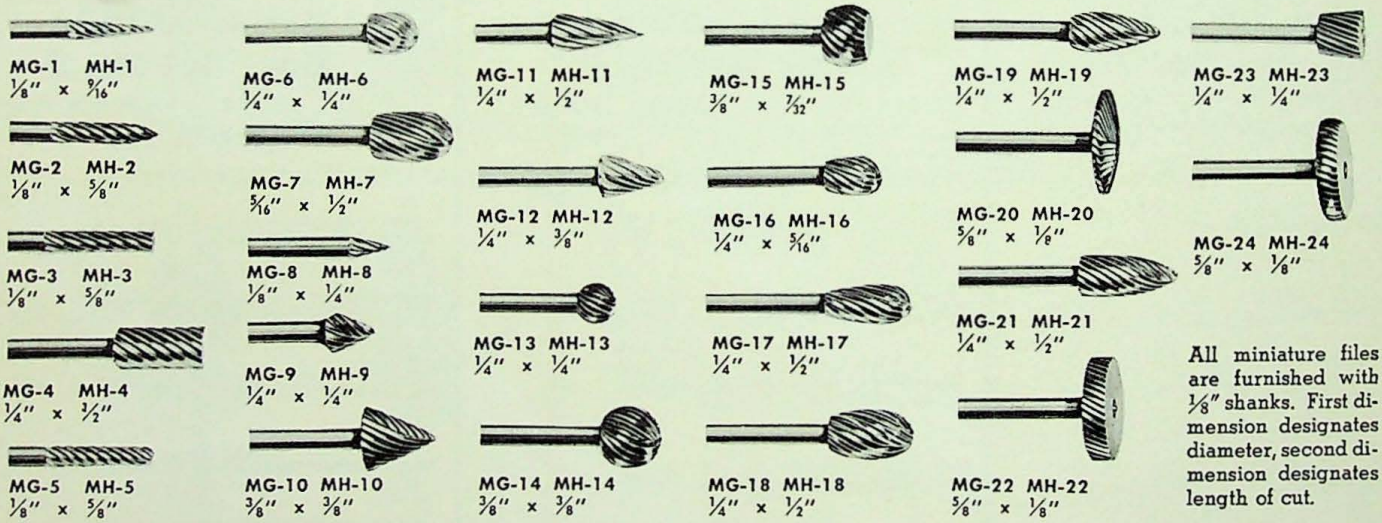
ASSORTMENT NO. 35 Hand Cut	ASSORTMENT NO. 55 Ground-From-Solid	ASSORTMENT NO. 25 Hand Cut
H- 7-M	HG- 7-M	H- 7-M
H-14-M	HG-14-M	H-10-M
H-21-M	HG-21-M	H-14-M
H-38-M	HG-38-M	H-21-M
H-62-M	HG-62-M	H-38-M
H-94-M	HG-94-M	H-62-M
		H-94-M
		H-96-M

ASSORTMENT NO. 45 Ground-From-Solid	ASSORTMENT NO. 65 Miniature Ground-From-Solid	ASSORTMENT NO. 75 Miniature Ground-From-Solid
HG- 7-M	MG- 4	MG- 3
HG-10-M	MG- 6	MG- 4
HG-14-M	MG-10	MG- 5
HG-21-M	MG-14	MG- 6
HG-38-M	MG-18	MG-10
HG-62-M	MG-20	MG-14
HG-94-M	MG-21	MG-18
HG-96-M	MG-23	MG-20
		MG-21
		MG-23

MINIATURE ROTARY FILES

Illustrations show Ground-From-Solid type MG — Ground-From-Solid

(HIGH SPEED STEEL)
MH — Hand-Cut



All miniature files are furnished with 1/8" shanks. First dimension designates diameter, second dimension designates length of cut.

REGRINDING SERVICE

Heller will regrind High Speed Steel Rotary Files and Carbide Burrs, restoring them to service at a fraction of their original cost. We have complete facilities for reconditioning chipped or damaged tools. Used or worn Hand Cut Rotary Files, for example, can be converted to Ground-from-Solid, extending their useful life. Prompt, dependable service.

HELLER TOOL CO.

America's Oldest File Manufacturer
NEWCOMERSTOWN, OHIO
Subsidiary of Simonds Saw and Steel Co.

Branch Offices and Warehouses:
Union, N. J. • Detroit • Chicago • Shreveport • Los Angeles • San Francisco • Portland, Oregon

CATALOG No. R-48

5M-2-62 PRINTED IN U.S.A.